Economic Impact Analysis of the Proposed Perchloroethylene Dry Cleaning Residual Risk Standard

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As part of its regulatory support role for Clean Air Act (CAA) programs, the Innovative Strategies and Economics Group (ISEG) within the Office of Air Quality Planning and Standards (OAQPS) analyzes the small entity and economic impacts of sector-specific and broad national emission reduction strategies. Such analyses are in accordance with statutory requirements (Section 317 of the Clean Air Act, and Small Business Regulatory Enforcement Fairness Act (SBREFA)), and are also designed to provide useful information on the impacts of this proposed standard on directly affected firms and on their consumers. This report provides an economic impact analysis for the dry cleaning residual risk standard as applied to all of the sources affected by this proposal: major source and area source dry cleaners. The area source dry cleaners include co-residential facilities, which are of particular interest in this rulemaking given the proximity of apartment residents to these sources and the risk exposure from perchloroethylene (PCE) emissions they experience.

The analysis is a comparison of the annualized compliance costs to the annual revenues for known and potentially affected firms. Cost and revenue data are in 2002 dollar terms. All costs are annualized using a 7 percent interest rate. The analysis for major source owning firms is a detailed firm-by-firm assessment given that there are only 15 major source dry cleaners in the US affected by this proposal.[1] The analysis for area source dry cleaners presumes that each affected area source owning firm owns a single dry to dry cleaner. We believe this is a reasonable assumption given data that will be shown later in this report. The analysis includes calculation of impacts to co-residential area sources, and an analysis of the co-proposal option to regulate such area sources according to New York State Dept. of Environmental Conservation Part 232. The economic impacts focus on existing major and area sources, and is meant to provide a "snapshot" of potential impacts to such sources in the fifth year after promulgation. This type of estimate is consistent with the cost analyses upon which this report is based. Economic impacts for new area sources are not estimated since insufficient data are available to calculate such impacts.

Profile of Dry Cleaning Industry

Dry cleaners use PCE in a dry cleaning machine to clean all types of garments including clothes, gloves, leather garments, blankets, and absorbent materials. There are approximately 28,000 PCE dry cleaning facilities in the United States. Of the 28,000 dry cleaners, 15 of the facilities are major sources, and the remaining are area sources. Major source PCE dry cleaners are those that emit 10 tons or more of PCE per year upon the compliance date of the 1993

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[1] The Agency is aware that two of these 15 dry cleaners have either ceased operations or are using a solvent other than PCE.

NESHAP. The 1993 dry cleaning NESHAP defines this as facilities that purchase more than 2,100 gallons of PCE per year (1,800 gallons per year if the facility uses transfer machines). The 15 major sources use approximately 2% of the total perchloroethylene (PCE) used in the dry cleaning industry. Area sources are typically the common neighborhood commercial dry cleaner. Area sources were divided into large or small in the 1993 NESHAP, with large area sources defined as those facilities that use between 140 to 2,100 gallons of PCE per year (or 140 to 1,800 gallons per year if the facility uses transfer machines). Small area sources use less than 140 gallons per year. Some area sources are collocated in the same building with residences. In the 1993 NESHAP EPA did not specifically discuss these sources, but in this proposal we refer to them as co-residential dry cleaners. A co-residential dry cleaning facility is located in a building in which people reside. Co-residential facilities are located primarily in urban areas.

In general, PCE dry cleaning facilities can be classified into three types : commercial, industrial, and leather. Commercial facilities typically clean household items such as suits, dresses, coats, pants, comforters, curtains, and formalwear. Industrial dry cleaners clean heavily-stained articles such as work gloves, uniforms, mechanics' overalls, mops, and shop rags. Leather cleaners mostly clean household leather products like jackets and other leather clothing. The 15 major sources include eight industrial facilities, five commercial facilities, and two leather facilities. The five commercial facilities are each the central plant for a chain of retail storefronts. Of the fifteen major source facilities, the four top PCE users are industrial facilities cleaning some percentage of leather and heavy work gloves. These four facilities use 65% of the total PCE of all the major sources. We do not expect any new source facilities constructed in the future to be major sources. Based on the low emission rates of current PCE dry cleaning machines and the typical business models used in the industrial and commercial dry cleaning sectors, it is unlikely that any new sources that are constructed will emit PCE at major levels, or that any existing area sources will become major sources due to business growth.

Dry cleaning machines can be classified into two types: transfer and dry-to-dry. Similar to residential washing machines and dryers, transfer machines have a unit for washing/extracting and another unit for drying. Following the wash cycle, PCE-laden articles are manually transferred from the washer/extractor to the dryer. The transfer of wet fabrics is the predominant source of PCE emissions in these systems. Dry-to-dry machines wash, extract, and dry the articles in the same drum in a single machine, so the articles enter and exit the machine dry. Because the transfer step is eliminated, dry-to-dry machines have much lower emissions than transfer machines.

New transfer machines are effectively prohibited at major and area sources due to the 1993 NESHAP requirement that new dry cleaning systems eliminate any emissions of PCE while transferring articles from the washer to the dryer. Therefore, transfer machines are no longer sold. Existing transfer machines are becoming an increasingly smaller segment of the dry cleaning population as these machines reach the end of their useful lives and are replaced by dry-to-dry machines. There are approximately 200 transfer machines currently being used, all at area sources.

The primary sources of PCE emissions from dry-to-dry machines are the drying cycle

and fugitive emissions from the dry cleaning equipment (including equipment used to recycle PCE and dispose of PCE-laden waste). Machines are designed to be either vented or non-vented during the drying cycle. Approximately 200 dry cleaners (1 percent) use vented machines, and the remaining facilities use the lower-polluting, non-vented machines. (The 1993 NESHAP prohibits new dry cleaning machines at major and area sources that vent to the atmosphere while the dry cleaning drum is rotating.) In vented machines, the majority of emissions from the drying cycle are vented outside the building. In non-vented machines, dryer emissions are released when the door is opened to remove garments. Currently, the largest sources of emissions from dry cleaning are from equipment leaks, which come from leaking valves and seals, and the loading and unloading of garments.

In the future, the only major sources that we expect to see are the existing facilities (ERG, 2004). Based on the low emission rates of current PCE dry cleaning machines and the typical business models used in the industrial and commercial dry cleaning sectors, it is unlikely that any new major sources will be constructed or that any existing area sources will become major sources by the addition of new equipment. The typical business models for these facilities are picking up clothes for processing within a couple hundred mile radius of the facility and not across several states, this limits the amount of potential garments facilities can service. Most new dry cleaning machines have fourth generation (dry-to-dry closed loop machines with refrigerated condenser and carbon adsorber) emission controls. A typical new fourth generation machine can clean 800 pounds of garments per gallon of PCE. A new or existing source would need to clean 840 tons of clothes to exceed the major source threshold of 2,100 gallons [2,100 gallons * 800 lb/gallon * 1 ton/2000 lb = 840 tons].

No new commercial facilities are expected to be major sources. New area sources allowed to install third generation machines (dry-to-dry closed loop with refrigerated condenser) under the current requirements of the NESHAP, would need to clean 525 tons of clothes to exceed the major source threshold of 2,100 gallons. This estimate is based on a typical performance of a new third generation machine of 500 pounds per gallon of PCE [2,100 gallons * 500 lb/gallon * 1 ton/2000 lb = 525 tons].

The largest commercial dry cleaning source, Bergmann's Inc., dry cleaned 390 tons of garments in 2001. We do not anticipate that any facilities will clean as much as 525 tons of garments per year. Several dry cleaning chains have thirty to sixty storefronts, but the logistics of the commercial market make it uneconomical to clean clothes from a large network at a single location. They divide up the drop shops to send their clothes to be processed at several plants instead of one large plant. Therefore, it is also unlikely that a new facility in the commercial sector using third or fourth generation machines would exceed the major source threshold. New and existing commercial dry cleaning sources are and will be area sources.

Economic Impacts to Major Sources

Background

There are 14 parent firms with major sources affected by the dry cleaning residual risk standard. Of these firms, eight (or more than half) are small according to Small Business Administration (SBA) size standard guidelines. The U.S. Small Business Administration's size standards for small dry cleaning firms is $4 million in annual revenue (NAICS 812320, dry cleaning and laundry services [except coin-operated]). It is expected that virtually of the firms with affected area source dry cleaners will be found in NAICS 812320). Although firm specific data is not available, U.S. Census average firm revenue data suggests almost all of the affected firms could potentially be small. For example, 1997 data shows over 99 percent of firms in SIC 7216 (dry cleaning plants, except rug) may meet this threshold. Revenue data could not be found for 4 of the 14 affected firms. All 4 of these firms are small according to the SBA guidelines. The firm with the largest annual revenues among those that had available data is Jim Massey's Cleaners & Laundry with $16.6 million in revenues in 2002 (the year for the cost data). All of the firms have excellent credit ratings except for White Tower (which had a very good credit rating).

As mentioned earlier, impacts in this analysis are calculated as annualized costs/annual revenues for the affected firms. Annualized costs are estimated according to the equation listed below:

$$CSR = \frac{\sum_{i}^{n} TACC}{TR_j}$$

where

TACC = total annual compliance costs,

i = indexes the number of affected plants owned by company j,

n = number of affected plants, and

TRj = total revenue of ultimate parent company j.

We conducted a small entity-level analysis for ultimate parent companies that owns and operates affected units that will be affected by air pollution reduction strategies. This approach uses census data for average firm revenue by employment size for SIC 7216 (dry cleaning plants, except rug cleaning) and NAICS 812320 (dry cleaning and laundry services [except coin-operated]) and engineering cost estimates. Costs include enhanced LDAR along with the costs of the other options, and do account for savings from reduced PCE use. As shown in Table 1, these impacts are fairly low for the options examined in this analysis. Option 1 requires the implementation of an enhanced LDAR program and the use of dry-to-dry machines that do not vent to the atmosphere (i.e., closed loop) during any phase of the dry cleaning cycle. Refrigerated condensers and carbon adsorbers (RC + CA) are required for all machines. Enhanced LDAR + refrigerated condensers and carbon adsorbers is the proposed option for both existing and new major source dry cleaners. Option 2 would require a PCE sensor lockout system in addition to the requirements in Option 1 and is not the proposed option for major source dry cleaners. Only ALAC, White Tower (not a small firm), and Leather Rich (also not a

small firm) experience annual costs that are 1% of revenues or higher, and these impacts occur under Option 2. In fact, there are many instances of cost savings for these firms under these options. Two firms, Circle Environmental and Libra Industries, are expected to have cost savings under each of these two options. In these cases, the savings from reduced PCE usage outweigh the costs from applying the options.

For the firms with annual costs of greater than 1% of sales, ALAC experiences the greatest impact under any of the regulatory options (2.25% under Option 2). ALAC's three dry cleaners vary in age from 25 to 29 years. This is well in excess of the 15 years that is typical for industrial dry cleaning machines. It could be said that this regulatory option, if applied, may encourage the firm to replace machines it was expected to replace in any event, especially if the machines had not undergone any significant modifications or upgrades over their lifetimes. Thus, it is possible that the costs of this option may not be the full amount estimated given that equipment replacements may have to occur in a very short time. The potential for needed equipment replacements unrelated to this residual risk proposal may be one reason why ALAC intends to close its PCE dry cleaning operations in 2004. Thus, PCE emissions from these ALAC facilities may be zero by the time the residual risk rule is implemented.

Table 1. Economic Impacts for Major Source Dry Cleaners - Residual Risk Options

Parent Firms Affected, Individually and by Category	Total Revenues in 2002 for Each Affected Firm	Is the Firm Small?	Total Annual Costs for [a]RC +[C]CA + Enhanced LDAR (Option 1)[d]	Total Annual Costs for PCE[b] Analyzer-Lockout + Option 1 Requirements (Option 2)	Cost/Sales for Affected Firms Option 1	Cost/Sales for Affected Firms Option 2
Industrial						
ALAC Garment Services	3,800,000	Yes	$(35,389)[c]	$85,429	-	2.25
White Tower Industrial Laundry	15,000,000	No	60,178	295,844	0.40	1.92
Libra Industries, Inc.	10,500,000	Yes	(41,429)	(21,032)	-	-
Circle Environmental		Yes	(35,810)	(32,106)	-	-
Complete Laundering Services		Yes	(11,551)	55,313	-	Cannot Be Estimated
Midwest Industrial Laundry		Yes	(3,869)	277	-	Cannot Be Estimated
Spic and Span , Inc	7,500,000	No	0	0	0	0
Leather						
Leather Rich (Leather Technologies?)	7,500,000	No	(2,161)	110,145	-	1.47
Acme Sponge & Chamois Co.	14,000,000	Yes	(3,347)	15,641	-	0.11
Commercial						
Bergmann's, Inc.	11,500,000	No	9,957	60,188	0.087	0.52

Jim Massey's Cleaners & Laundry	16,600,000	No	(1,855)	20,612	-	0.12
Sam Meyer Formal Wear	15,000,000	No	12,019	37,618	0.080	0.251
Quality Chinese Laundry		Yes	3,522	10,285	Cannot Be Estimated	Cannot Be Estimated
Peerless Cleaners	3,800,000	Yes	10,201	35,233	0.268	0.927

[a] RC = refrigerated condenser; CA = carbon adsorber;

[b] PCE= perchloroethlyene

[c] Values in parentheses are negative.

[d] Revenues are for 2002 - the year for which the costs are estimated.

Annual costs in the analysis = Annualized capital + MRR labor (where appropriate) + operating cost + PCE savings.

A "-" denoted a negative cost/sales value, which denotes a cost savings from applying the regulatory option. "Cannot Be Estimated" refers to the lack of available revenue data for the firm. We presume that all firms for which no revenue data is available are small firms.

Economic Impacts to Area Sources

Affected Entities

An affected dry cleaning area source has at least one dry cleaning machine (i.e., dry cleaning is performed on-site) and uses PCE. As mentioned above, there are an estimated 27,800 area source dry cleaners in the country (ERG, 2005). 1,300 of these are located at co-residential facilities. Most of these facilities are located in New York City and California. Most of these machines (61 percent) will have refrigerated condensers and carbon adsorbers on them by 2006, the year this rule will be promulgated. Of the remainder, 37 percent are expected to have refrigerated condensers. The final 2 percent of affected dry cleaning machines are transfer or vented machines. These are much older machines whose economic life on average will be at least 13 years old by 2006.

Analysis Results

We made assessments of the economic and financial impacts of the rule using the ratio of compliance costs to the value of sales (cost-to-sales ratio or CSR) using revenues and pollution control expenditures as shown in the equation above. The analysis assessed the burden of the rule by assuming the affected firms absorb all of the control costs, rather than pass them on to consumers in the form of higher prices.

As shown in Table 2, average firm revenue in 1997 ranged from $187,000 to $30.9 million for firms in this industry. Although it is limited to the top 50 firms, the latest census data for 2002 provides an average firm revenue estimate $13.8 million. Similar sales data by employment ranges is not currently available.

Table 2. Characteristics of Dry cleaning Ultimate Parent Companies in SIC 7216 (NAICS 812320) (Dry cleaning Plants, except Rug Cleaning)

	1997 Data					2002 Data
Variable	**<20 Employees**	**20-99 Employees**	**100-499 Employees**	**500 plus Employees**	**Industry Total**	**Top 50 Firms**
Number of Firms	18,016	1,857	102	4	19,979	50
Average Number of Establishments	1	2	7	89	1	21
Average Firm Revenue ($million)	$0.187	$0.888	$16.161	$30.943	$0.278	$13.750

Options Analyzed

This report contains economic impacts estimated for area sources (large and small sized) associated with two options: Option 1 - Enhanced Leak Detection and Repair (LDAR) and a

prohibition on the use of existing transfer machines, and Option 2 - Secondary Control (adding carbon adsorbers to refrigerated condensers) plus Option 1 requirements. Enhanced LDAR requires the use of a hand-held halogenated hydrocarbon detector (HHD) for the leak detection of all specified components of a dry cleaner. The capital cost for this option is the $250 cost of a HHD. The maintenance costs of a HHD are limited to replacing a sensor in three years. With a 45 minute inspection time assumed, the total labor cost is $131 per year. The annualized cost of the HHD and sensor replacement in three years, presuming the 7 percent interest rate mentioned earlier in this report and a 10 year HHD life, is $36 + 14 = $50. Therefore, the annualized cost of Option 1 per affected dry cleaning machine is $50 + 131 = $181 (2002$). It is assumed that enhanced LDAR does not impose additional repair costs because the current NESHAP already requires leak repair identified during the weekly or biweekly inspections for perceptible leaks.

For Option 2, it should be noted that many sources have secondary control already and thus would incur no costs to meet this option. For these sources, the only regulatory cost they incur is the enhanced LDAR requirement if they don't have such a program in place already (i.e., Option 1). Most of the cost for this option is for machines with refrigerated condensers to be retrofitted wiht carbon adsorbers. Most machines purchased since 1996 are designed to be easily retrofitted with carbon adsorbers. For pre-1996 machines, the cost to retrofit is higher. The capital retrofit cost for 1996 machines and later is $5,500; pre-1996 machines capital retrofit cost is about $12,000. The cost estimates assumed that half of the machines that must be retrofitted with a carbon adsorber would fall in each age category.

For facilities with transfer or vented machines, it is necessary for them to buy a new dry cleaning machine since it is technically infeasible to retrofit such machines with secondary controls (NC DENR, 2001). The capital cost for a new machine with secondary controls is $35,600 based on quotes from multiple vendors. This cost includes installation and reflects the average size machine for area source facilities (40 pounds). The annualized capital cost of a new machine is 35,600 * 0.1098 = $3,909, presuming a 7 percent interest rate and 15 year economic life for a new machine. New transfer or vented machines were banned as a result of the dry cleaning NESHAP that became final in 1993. Thus, the only transfer or vented machines in operation today are those that were operating at the time this NESHAP became final. Hence, these machines are at least 12 years old and are approaching the end of their typical useful life (15 years).

For new area sources (large and small), the proposed rule would require implementation of an enhanced LDAR program and the use of non-vented dry-to-dry machine with a RC and CA. In addition, the proposed rule would prohibit the use of new PCE machines in co-residential dry cleaning facilities.

Number of Sources Affected

Option 1 will apply to all existing area sources. The 7,400 facilities in the States of

California, New York, Rhode Island, and Maine are already required to conduct the equivalent of enhanced LDAR, thus there is no cost to them from meeting this requirement. Thus, the number of sources affected by this requirement are 27,800 - 7,400 = 20,400. We estimate that the number of these sources owned by small firms is 0.99 * 20,400 = 20,200.

These 7,400 facilities also require secondary controls for their dry cleaners, so they incur no cost for meeting Option 2. Of the remaining 20,400 sources, 39 percent or 7,900 would need to apply additional control to meet Option 2. 7,500 of these sources will be able to add secondary control. The 200 sources with transfer machines, however, can not be retrofit with the secondary control and will have to purchase a new machine to meet the Option 2 requirement.

Economic Impacts

Cost to Sales Analysis

Net annualized costs include the cost savings from the reduction in PCE usages. The total price of PCE is $16.63 per gallon, based on an estimate of national average price per gallon, an average site cleanup tax, and sales tax and shipping (ERG, 2005).

For Option 1, the 20,400 facilities are expected to incur a capital cost of $250 apiece for the HHD, and a total annualized cost of $181. The reduction in PCE usage yields a cost savings of $315 on average per machine, thus leading to a net annualized cost savings of $132. The net annualized cost (a savings) is estimated at $-2,700,000. Given the cost savings and minimal capital expenditure, there should be no significant economic impact to small business area sources or other area source owning firms from compliance with this option.

For Option 2, 7,500 affected facilities will have to apply a secondary control. Half of them are expected to be pre-1996 machines that will incur a capital cost of $12,000 and an annualized cost of 12,000 * 0.1098 = $1,318. The other half will be post-1996 machines will incur a capital cost of $5,500 and an annualized cost of 5,500 * 0.1098 = $604. Therefore, the total annualized cost of Option 2 for the pre-1996 machines will be 3,750 * 1,318 = $4,943,000, and 3,750 * 604 = $2,265,000 for the post-1996 machines. The 200 transfer and vented machines will each incur on average a capital cost of $35,600 and an average annualized cost of $3,909, which leads to a total annualized cost of 200 * 3,909 = $781,800. This total annualized cost before reduced PCE usage is $7,989,800. With reduced PCE usage included from the enhanced LDAR program and the lower PCE consumption associated with the ban on transfer and vented machines, the net annualized cost is $7,100,000.

Economic impacts for Option 2 (Enhanced LDAR + secondary controls) are estimated using the cost-to-sales approach listed in section 2 above. An estimate of average firm sales was generated by taking the dry cleaner firm average sales of $278,000 found in Table 1, an estimate in 1997$, and escalating it to 2002$ using the Gross Domestic Product (GDP) price deflator.

The calculation is (GDP 2002/GDP 1997) *278,000. With GDP 2002 (January) = 103.568 and GDP 1997 (January) = 95.054, the average estimated sales for dry cleaning firms is (103.568/95.054) * 278,000 = $302,900.

To calculate cost to sales impacts, we come up with a weighted average annualized cost for firms affected by this option since different types of machines are being affected. This annualized cost estimate for the 7,500 that can apply secondary control to meet Option 2 is (1,318 + 604)/2 = $961 - 132 = $829. This estimate reflects the fact that half of the machines that can put on secondary control have a higher cost for control than the other half. Hence, the annualized cost per firm is the arithmetic average of the costs for each half. The $132 that is subtracted from this average annualized cost per firm reflects the cost savings from meeting Option 1, which is a part of the Option 2 requirements. The cost to sales estimate on average for the firms that own these dry cleaning machines is 829/302,900 = 0.0027 or 0.27 percent. For the 200 transfer and venting machines that will require replacement to meet Option 2 requirements, the cost to sales on average for the firms that own these dry cleaning machines is 3,909/302,900 = 1.29 percent.

Another substitution possibility that the Agency has included in its analyses but is not a requirement of the proposal is an estimate of the impacts to co-residential facilities of a ban on new PCE machines. This estimate presumes that dry cleaners who want to continue in that business and desire to buy new dry cleaning machines will purchase machines that use hydrocarbon (typically a petroleum) solvent. Existing PCE machines can continue to operate indefinitely, but these machines can only be replaced by a non-PCE machine. This type of solvent cleaner is becoming increasingly popular as new dry cleaning machine installations. A recent report shows that in the San Francisco Bay Area, 75 percent of new dry cleaning machines use hydrocarbon solvent (Bay Area AQMD, 2005).

The capital and annual costs associated with buying and operating hydrocarbon solvent machines vary based on location. In this analysis, we estimate the impacts for new hydrocarbon solvent machines installed in New York and those installed outside of New York. We make this distinction based on two factors: 1) the large number of co-residential machines in New York that would be affected by this requirement, and 2) the higher costs of installation and operation of these dry cleaners in New York relative to the rest of the U.S. As part of this analysis, we assume that a sprinkler system will be required along with all hydrocarbon solvent dry cleaners in New York, and that 50 percent of all dry cleaners outside of New York will be required along with hydrocarbon solvent dry cleaners. The capital cost for a hydrocarbon dry cleaner incremental to the capital cost of a new PCE machine with secondary controls (i.e., a carbon absorber) is $25,000; the annualized cost of the cleaner is $2,690 (based on a 7 percent interest rate and a 15 year economic life). It is expected that a sprinkler system will be required for hydrocarbon solvent dry cleaners in New York if they choose to install such cleaners, and our analysis presumes that all such dry cleaners will need to install a sprinkler system. The capital cost of a sprinker system is estimated at $20,000 in New York and at $15,000 outside of New

York. Hydrocarbon solvent dry cleaners in New York only would also incur an additional capital cost expense of $8,000 because of a special requirement that these machines would need a special Mechanical Equipment Approval. It should be noted that the operating and maintenance costs for hydrocarbon solvent machines is presumed to be identical to those for PCE machines. All impacts for this substitution possibility are presented for the fifth year after proposal of this regulation. Table 3 summarizes the number of co-residential facilities affected and the costs of these new dry cleaners for this option that is not a requirement in this proposal:

Table 3 - Costs of New PCE Machine Ban for Substitution Possibility - Switch to New Hydrocarbon Solvent Cleaners

Location	Number of Facilities Affected in 5 Years	Capital Cost Per Affected Facility Incremental to New PCE Machine	Fire Protection Cost (Sprinkler System + Additional Certification)	Total Capital Cost Per Affected Facility	Annualized Cost Per Affected Facility
New York	100	$25,000	$28,000	$53,000	$5,855
Outside New York - Sprinkler System Required	50	$25,000	$15,000	$40,000	$4,427
Outside New York - Sprinkler System Not Required	50	$25,000	0	$25,000	$2,780

Economic impacts for this analysis are estimated using the cost-to-sales approach listed in section 2 above. Using the average estimated sales for dry cleaning firms of $302,900 calculated above, the annualized cost to sales is $5,855/302,900 = 1.9 percent for the affected firms (approximately 100) in New York, 4,427/302,900 = 1.5 percent for the approximately 50 firms outside of New York that will require a sprinkler system along with a new hydrocarbon solvent machine, and 2,780/302,900 = 0.9 percent for the approximately 50 firms outside of New York that will not require a sprinkler system along with a new hydrocarbon solvent machine. Hence, the range of small business impacts associated with this option for the affected co-residential area sources is compliance costs of 0.9 to 1.9 percent of sales. The average economic impact for these affected small businesses is compliance costs of (945,850/200)/302,900 = 1.6 percent of sales.

It should be noted that the analysis for this substitution possibility may provide an overestimate of economic impacts for dry cleaning firms in New York given that their average revenue is likely to be higher than the national average used here. In addition, the estimate of 50 percent for the number of dry cleaning firms that will need a sprinkler system in order to operate a hydrocarbon solvent machine may be an overestimate, hence leading to an overstatement of the total costs associated with this substitution possibility.

The Agency is also co-proposing an option to regulate co-residential area sources according to the requirements under New York State Dept. of Environmental Conservation Part 232. Under these requirements, all PCE using co-residential area sources are required to put on enhanced LDAR, RC + CA, and a vapor barrier enclosure. The Agency has estimated that 242 co-residential area sources nationwide will have to put on controls to meet the requirements of this option. Of these 242, 83 already have secondary controls (i.e., RC + CA) on them. Estimates of the costs by number of affected source are available in the table below.

Table 4. Impacts of New York State Part 232 Requirements

Dry Cleaner Machine Type	Number of Affected Facilities	Total Annualized Costs (2002$)	Total Annualized Cost per Facility
Transfer*	2	N/A	N/A
Vented	2	$11,976	$5,988
RC	79	268,352	3,396
RC + CA	159	210,887	1,326
Total:	242	$491,215	N/A

* Transfer machines will be banned for all area sources, including co-residential ones, by another requirement in the proposed rule.

To estimate the economic impacts of this option for co-residential area sources, we calculated the annualized cost per facility as shown in the far right column of Table 4. Given the average revenue of affected small dry cleaning firms is $302,900, that this estimate is applicable to small dry cleaning firms owning affected co-residential sources under this option, and that 99 percent of the 242 affected facilities are owned by small firms (or 0.99 * 242 = 240), the following impacts are estimated:

Small firms owning vented machines: 5,988/302,900 = 1.9 percent cost to sales
Small firms owning machines requiring RC: 3,396/302,900 = 1.1 percent cost to sales
Small firms owning machines requiring RC + CA: 1,326/302,900 = 0.4 percent cost to sales

Hence, the range of small business impacts associated with this option for the affected co-residential area sources is compliance costs of 0.4 to 1.9 percent of sales. The average economic

impact for these affected small businesses is compliance costs of (491,215/240)/302,900 = 0.7 percent of sales.

Conclusions of Report

The Agency has concluded that there is not a significant impact to a substantial number of small firms (or SISNOSE) associated with this proposal. This conclusion is based on a small entity analysis for firms across the entire dry cleaning source category (major and area source owning firms). For major sources, with each firm expected to experience cost savings annually under the proposed option, there are no negative economic impacts expected to small firms under this option. Under the proposed rule for all existing area sources, impacts for the affected small or large firms are expected to be costs of less than 1 percent of sales for the great majority of affected firms. Only those firms that will have to replace their current dry cleaning machines (i.e., the firms owing the 200 existing transfer and venting machines) will incur a higher impact (just over 1 percent on average) and some small firms owning co-residential area sources (no more than 200). The number of small firms owning dry cleaners that will incur more than 1 percent of sales is only 1.4 percent of the total number of small firms [(0.99 *(400 + 150)/27,800)) = 0.0014], and the transfer and venting machines that must be replaced are near the end of their typical useful life currently and thus will face additional maintenance costs to continue operating these machines or replace them with newer machines in any event. Based on these findings, which includes the co-proposed option for co-residential area sources, the Agency has made its no SISNOSE determination for this proposed rule.

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